

Dear Robert Fabris,

20 Oct 79

I've been away the last few months and can see that I have to respond to some info you have had in the mailings.

Please put me in as a reviewer of games. I have the time now and am able to go over and perhaps improve upon some games. (I will send you my revised slot machine program next month.)

My address and telephone number is:

6  
Anson P. Winsor  
466 Selfridge Dr.  
Colo Spgs, Co 80916  
phone (303) 596-4921

I have seen the Hackers manual mentioned a few times. I would like to find out how much a copy of it would cost.

6 That volume of about 140 pages of Routines. I am very interested in getting a copy. Please put me down as one of those showing interest. By the way, where did you get it, how much for a copy.

Also, even though I hadn't responded before, I am interested in expanding my computer. Please send info about the work being done and how can I do it.

I have inclosed two short and one long program. The long one, CONCENTRATION, has a page documenting it. The cassette with the coded programs is mailed at the same time.

Also inclosed is a page of notes on the Loop and Subroutines as the pop/push stack saves them.

I have just achieved results in becoming a dealer in the BALLY product. (enclosed is two sheets on the price list and the two new cassettes coming out.)

Please place an ad in the next months ARCADIAN:

Free shipping on any order and 10% off any orders over \$50.

Complete line of BALLY products. Also Arcadian software for sale or trade. Winsor Computers, 466 Selfridge Dr., Colo Spgs, Co. 80916. (303) 596-4921.

12 I am working on ways to run machine code programs. When I have more definate information about it I will send how. Right now I have been able to get some machine code loaded and am able to run and rerun it again and again without having to reload it into memory.

I have noticed that text won't let you call to it. I believe this is because the bally basic has some check code to stop anyone from accessing bytes that also coorspond to the bits representing the TV screen. Just a guess so far.

The hex dump I've included enables one to check out many areas of code. I can see how you could get the code of the bally basic cassette if it would help out.

Is there any info you can send me in the area of runing machine code besides that volume you were telling us about?

What further work is being done on expansion?

## NOTES ON THE SUBROUTINE &amp; FOR LOOP PUSH-DOWN/POP-UP STACK.

Subroutine levels and loop parameters are placed into the stack in a First-In-Last-Out (FILO) basis. Only those FOR Loops originated at a particular subroutine level are available in that now level.

Example that doesn't work:

10 For A=1TO 5	Initialize Loop parameters.
20 GOSUB 100	Loop parameters get put into stack
.	
.	any code
.	
100 NEXT A	Requesting a test of the Loop that was orginated in a different sub level. The computer doesn't have this info in the current now level, but it is in the stack.

The computer cannot find any reference to the loop you are trying to test and breaks out of your program with a "WHAT?".

When a previous level of subroutine is popped up, current Loop parameters are lost and the previously stored loop parameters are available again.

There are 20 levels available of subroutines. The 'now' level currently available to the computer and 19 levels in the stack. Try this short program to see:

10 X=0	At the main now level with no subroutines.
20 GOSUB 30	Pushing the current now level into the stack.
30 X=X+1;PRINT X	Showing the subroutines in the stack.
40 GOTO 20	Back to 20 to try another subroutine level.

The computer only lets you push 19 levels of subs into the stack. When the 20th level is tried to be pushed, the computer responds again with a "WHAT?".

When only Loops, or Loops & subroutine levels, are involved there are fewer spaces available in the stack. Example of only Loops:

10 X="A"	X=numeric value of "A"
20 FOR A=1TO 5;PRINT "A"	Start the 'A' Loop and Print the letter 'A'. (Later will print B,C,D,E,etc.)
30 X=X+1	Increment X to the numeric value of 'B' (later to C,D,E,etc.)
40 %(-24566)=X*256+"FOR"	Poke in 'FOR A' into text line 20.
50 %(-24558)=X*256+34	Poke in 'A' into text of line 20.
60 GOTO 20	Go back to 20 to start next loop and print out what loop was started.

Notice it only lets you have 16 Loop parameters (up to 'P').

When Loops and subroutine levels are mixed, the total allowed is usually about 17.

Code is not needed to terminate a loop if the loop parameters are never tested against before the loop is reinitialized again.

10 FOR A=1TO 10;FOR B=1TO 5	Better to change line 20 to read
20 IF @(A)=0A=10;B=5	20 IF @(A)=0 GOTO 100
30 NEXT B;NEXT A;GOTO 100	When the Loops are started again the previous parameters are lost and so it doesn't matter you didn't finish it before.
100 do something;GOTO 10	

## NOTES ON THE CONCENTRATION GAME

Lines 10-15 presets scores=0 and initial player locations.  
Line 20 lets you select a letters or numbers game.  
Line 30 sets up to play numbers 0-9, one each.  
Line 40 selects 10 letters at random, may be duplicates.  
Line 50 puts the letters/numbers (L/N) in random @ locations.  
Then duplicated the string for the other player.  
Line 60 draws each players game board.  
Line 80 inits a games variables and prints score.  
Line 85 places the player on board. First game in UL corner.  
Line 90 begins the game loop. Checks if you are trying to reveal a L/N or make a match attempt. If you are, it goes sub to reveal and check if a match was made. Upon return a check is made if you finished all matched on your board and are ready for another game. If a new game, goes to line 30 to restart.  
Line 100 gets new joystick values. If a change, it goes sub to move your marker.  
Line 110 ends the game loop and loops back to line 90 again.  
Line 120-170 is the move subroutine. Movement is made to stay on the board and return is made to game loop.  
Line 180 begins the L/N reveal and match check subroutine.  
Lines 180-190 retrieves the X-Y values and figures CX-CY values, and the index into @ is calculated.  
Line 195 if that location has been previously matched, if so, return.  
Line 196 if still at the location of a revealed L/N, return.  
Line 200 reveals the L/N. If it is the first half of a match attempt, the @, L/N, and X-Y values are saved and return made.  
Line 210 is checking if second half of a valid match is made. If not, the L/N on board are cleared and return is made.  
Line 215 a match is made. Pointers are cleared and scoring made.  
Line 220 If all of board is not matched, \* is stored in matched L/N boxes and return is made.  
Line 230 a game is finished. Winner gets bonus score and musical tones played. Request if want play more.  
Lines 240-250 is a loop to determine if another game is to be played. TR(1)=1 is a letter game and TR(2) is a numbers game. Return is made to the game loop then back to line 30 to start new game.  
Lines 260-270 is the scoring subroutine.

Notes on play: a match is made up of any number of games wanted with all scoring totaling up. A L/N match gets 5 points and a full board matched gets 25 bonus points for the player.

The attached listing has been doubled checked and should be exactly as the working one on my machine. Hopefully no bugs left in it.

Sincerely yours,

*Anscombe*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
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5 . CONCENTRATION  
 6 . APPR WINSOR  
 7 . /5 OCT 79  
 10 : RETURN ; NT=1 ; @(51)=0  
 ; @(52)=0  
 15 @(41)=-60 ; @(42)=20 ; @  
 43)=15 ; @(44)=15  
 20 CLEAR ; PRINT ; PRINT "  
 PLAY THIS ONE WITH:" ; PRINT  
 "1 = LETTERS" ; PRINT "2 =  
 NUMBERS" ; K=KP ; TV=K ; K=K-48 ;  
 IF (K<1)+(K>2) GOTO 20  
 30 IF K=2 FOR A=1 TO 10 ; @  
 (A)=A+47 ; @(A+10)=A+47 ; NEXT  
 A ; GOTO 50  
 40 FOR A=1 TO 10 ; @(A)=RND  
 (26)+64 ; @(A+10)=@(A) ; NEXT  
 A  
 50 CLEAR ; FOR A=20 TO 1ST  
 EP -1 ; B=RND (A) ; @(A+20)=@  
 (B) ; @(B)=@(A) ; NEXT A ; FOR A=  
 1 TO 20 ; @(A)=@(A+20) ; NEXT A  
 60 BOX -40, 0, 51, 41, 1 ; BOX  
 40, 0, 51, 41, 1 ; FOR X=-60 TO  
 60 STEP 10 ; FOR Y=-15 TO 15 ST  
 EP 10 ; BOX X, Y, 9, 9, 2 ; NEXT Y  
 ; NEXT X

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
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28|29|30|31|32|33|34|35|36|37|38|39|40|41|42|43|44|45|46|47|48|49|50|51|52|53|
80 @ (53) = 9; @ (54) = 9; @ (45)
= 0; @ (46) = 0; P = 1; GOSUB 260; P
= 2; GOSUB 260
85 BOX @ (41), @ (43), 9, 9, 1
; BOX @ (42), @ (44), 9, 9, 1; S = 1
90 FOR P = 1 TO 2; IF TR(P) G
OSUB 180; IF S = 0 GOTO 30
100 H = JX(P); V = JY(P); IF (H
# 0) + (V # 0) GOTO 120
110 NEXT P; GOTO 90
120 X = @ (40 + P); Y = @ (42 + P); B
OX X, Y, 9, 9, 3; X = X + H * 10; Y = Y +
V * 10; IF Y > -16 IF Y < 16 GOTO 1
40
130 Y = Y ÷ (-15) * (-15)
140 D = 60; E = 20; IF P = 1 D = -20
; E = -60
150 IF X > D X = D
160 IF X < E X = E
170 BOX X, Y, 9, 9, 3; @ (40 + P)
= X; @ (42 + P) = Y; NEXT P GOTO 9
0
180 X = @ (40 + P); Y = @ (42 + P); C
X = X + 1; C Y = Y; W = X; IF P = 1 W = -X
190 L = W ÷ 10 + 19 - (Y - 15) ÷ 10 * 5
; IF P = 2 L = L - 20
195 M = @ (L); IF M = 0 RETURN

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55|56|57|58|59|60|61|62|63|64|65|66|67|68|69|70|71|72|73|74|75|76|77|78|79|80

196 IF @ (44+P) # 0 IF L = @ (48+P) RETURN

200 BOX X, Y, 9, 9, 2; TV = M; IF @ (44+P) = 0 @ (44+P) = (X + 80) \* 100 + Y + 40; @ (46+P) = M; @ (48+P) = L; RETURN

210 W = @ (44+P) ÷ 100 - 80; Z = RM - 40; @ (44+P) = 0; IF M # @ (46+P) BOX X, Y, 9, 9, 1; BOX W, Z, 9, 9, 2; RETURN

215 @ (50+P) = @ (50+P) + 5; @ (L) = 0; @ (@ (48+P)) = 0; S = @ (52+P); GOSUB 260

220 IF S # 0 @ (52+P) = S - 1; BOX W, Z, 9, 9, 2; CX = W + 1; CY = Z; TV = 42; CX = X + 1; CY = Y; TV = 42; BOX X, Y, 9, 9, 3; RETURN

230 @ (50+P) = @ (50+P) + 25; GOSUB 260; NT = 7; FOR A = 1 TO 7; MU = 7; MU = 1; NEXT A; NT = 1; CY = -30; PRINT; PRINT "WANT TO PLAY SOME MORE? "

240 FOR K = 1 TO 2; IF TR (K) TV = K + 48; RETURN

250 NEXT K; GOTO 240

260 CY = 50; CX = 20; IF P = 1 CX = -60

55|56|57|58|59|60|61|62|63|64|65|66|67|68|69|70|71|72|73|74|75|76|77|78|79|80

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26  
270 PRINT "SCORE", #3, @(5  
0+P); RETURN

5 . DIVISION TO "N"

6 . DECIMAL PLACES

7 . APPR WINSOR

8 . 15 OCT 79

10 PRINT ; PRINT "ANSWER  
TO  $X \div Y$  ?

20 INPUT "# DECIMALS WAN  
TED" N

30 INPUT "INPUT X" X

40 INPUT "INPUT Y" Y

50  $Q = X \div Y$

60 PRINT "THE ANSWER IS:  
"; PRINT #1, Q, ". "

70 FOR A=1 TO N

80  $TV = RM * 10 \div Y + 48$

90 NEXT A

100 GOTO 10

28|29|30|31|32|33|34|35|36|37|38|39|40|41|42|43|44|45|46|47|48|49|50|51|52|53|

5 . HEX DUMP

6 . APPR WINSOR

7 . 15 OCT 79

10 PRINT ; INPUT "FROM WH  
ERE TO WHERE" A, U; C=1; PRINT  
; PRINT #4, A, ":",

20 S=0; Z=%(A); IF Z<0 Z=32  
767-ABS(Z)+1; S=1

25 Y=Z÷256; X=RM; IF S=1 Y=  
Y+128

30 GOSUB 70; X=Y; GOSUB 70

40 A=A+2; C=C+1; IF C>8 C=1  
; PRINT #4, A, ":",

50 IF A>=U GOTO 10

60 GOTO 20

70 X=X÷16; I=RM; GOSUB 90

80 X=I; GOSUB 90; TV=32; RE  
TURN

90 IF X<10 TV=X+48; RETURN

100 TV=X+55; RETURN

28|29|30|31|32|33|34|35|36|37|38|39|40|41|42|43|44|45|46|47|48|49|50|51|52|53|